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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,401	05/03/2004	Gregory Malejko	2003-028	3400
32170	7590	02/09/2005	EXAMINER	
U.S. ARMY TACOM-ARDEC ATTN: AMSTRA-AR-GCL BLDG 3 PICATINNY ARSENAL, NJ 07806-5000				ELDRED, JOHN W
ART UNIT		PAPER NUMBER		
		3644		

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/709,401	MALEJKO ET AL.
	Examiner J. Woodrow Eldred	Art Unit 3644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1)  Responsive to communication(s) filed on \_\_\_\_.
- 2a)  This action is FINAL.                            2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4)  Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-4 and 6-21 is/are rejected.
- 7)  Claim(s) 5 is/are objected to.
- 8)  Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a)  All    b)  Some \* c)  None of:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____ .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: ____ .

## DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 14, and 20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Romer et al (4,153,223).

See especially Figures 1, 3, and 4. Note that element 7 anticipates a cowling with an angled interior surface since the leading edge is angled into the interior of the cowling. Romer et al discusses the interaction of the shockwaves formed by the strut elements 5 as either allowing or choking airflow through the ducts 6 as the velocity of the projectile changes. While Romer et al does not discuss a shockwave from the leading edge of the cowling 7, it is inherent that this element will create a shockwave and, given the structure and disclosed performance of the air through the ducts, this shockwave must interact with the strut shockwaves and either allow or choke air passage in the ducts. Applicant's own disclosure supports this view of the inherency of the cowl shock wave, since paragraph 42 of the current application teaches that "shock waves 505 emanate off the cowling leading edge 42".

Concerning claim 20, it is also considered inherent that the "the diameter of the cowling is sized less than a bore of a gun that launches the training projectile" since the projectile of Romer et al would be unable to function if this limitation were not met.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romer et al.

Romer et al disclose a variable drag projectile stabilizer comprising all claimed elements, including a cowling, struts supporting the cowling, ducts formed by the cowling and struts, and angled surfaces on the struts and cowling such that the interaction of induced shock waves will easily allow supersonic flow of air through the ducts at launch, but the interaction of the shock waves will choke air flow through the ducts as the speed of the projectile becomes lower. Romer et al fails to disclose particular parameters of the elements, such as the length or diameter of the cowling or the struts, or the angles of the surfaces. It is considered to be a matter of normal engineering practice to apply parameters to each of these elements so that they will function in the disclosed manner of Romer et al and be appropriate for a particular situation and projectile. Without any evidence of unexpected results from the particularly claimed parameters, it is considered to have been obvious, and would not involve undue experimentation, to apply the specifically claimed parameters to the elements disclosed by Romer et al.

5. Claims 15- 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romer et al in view of either Henry et al (6,655,293) or Anderson (6,453,820).

Romer et al is applied as above, noting that they fail to disclose the use of strakes or the struts to apply a spin to the projectile. Henry et al and Anderson each teach that it is known to have aerodynamic elements on a projectile in order to induce spin on the projectile. See especially element 20 in Figures 1-3 of Anderson and elements 36 in Figure 3 of Henry et al. Motivation to combine is the advantage of using spin to control the stability of a projectile. To employ the teachings of either Henry et al or Anderson on the projectile of Romer et al and have the claimed struts or strakes to impart a spin on the projectile is considered to have been obvious to one having ordinary skill in the art.

6. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Woodrow Eldred whose telephone number is 703-306-4151. The examiner can normally be reached on Monday to Thursday, from 8:00 a.m. to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 703-305-7421. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J. Woodrow Eldred  
Primary Examiner  
Art Unit 3644

JWE